EMERGENCY VEHICLE OPERATOR

CLASS “B”

Session 1

Introduction

Policies, Procedures, and Laws

Practical Requirements

Course Administration
Enrollment and Documents

- Finalize registration
  - Enrolled – everyone present?
  - Waitlist
- Driver's License & History
  - Need a photocopy of current driver's license
  - Need a non-certified copy of motor vehicle record
- Class Roster
  - Verify the pre-printed information and fill in the blanks

Course Administration
Attendance

- Sign-in – EVERY class
- Every session is mandatory
  - If you must miss, discuss with the lead instructor as soon as possible
  - Accommodations for absences – sole discretion of the lead instructor
  - Make-ups must be documented
- Refer to the syllabus
  - For session dates
  - For session times – beware of night driving sessions
  - For session topics

Course Administration
Successful Completion

- Written Exam
  - 70% is passing
  - Pre-Trip
  - Vehicle Systems
  - Safe Driving Principles & Laws
- Practical Exercises
  - Pre-trip inspection
  - Air brake test
  - Road behavior evaluation
  - Cone course – zero cones; <10 minutes

Program Goal

To provide each driver/operator with the basic skills and knowledge required to safely, efficiently, and effectively operate heavy fire apparatus

Lesson Overview

- Why Class “B” Driver Course
  - Motivation
- Regulatory & Policy Considerations
  - COMAR, 808, 04-21
- Case Study – W717
- Safe Driving Practices
  - Smith System, SIPDE, Collision Reduction
- Practical Skills

WHY CLASS B CLASS?

Why Class B Driver Course?
§ 11-118 Emergency Vehicle – Defined

"Emergency vehicle" means any of the following vehicles that are designated by the Administration as entitled to the exemptions and privileges set forth in the Maryland Vehicle Law for emergency vehicles:

(2) Vehicles of volunteer fire companies, rescue squads, fire departments, the Maryland Institute for Emergency Medical Services Systems, and the Maryland Fire and Rescue Institute;

(3) State vehicles used in response to oil or hazardous materials spills;

(5) Ambulances; and

(6) Special vehicles funded or provided by federal, State, or local government and used for emergency or rescue purposes in this State.

Why Class B Driver Course?
Commercial Drivers' License Exemption

§ 16-102. Persons exempt from licensing requirements

(a) In general. -- The licensing requirements of this title do not apply to:

(12) A member or employee of a fire department, rescue squad, emergency medical service unit, or volunteer fire company while driving an emergency vehicle if the driver:

(i) Holds a valid Class C license issued to the driver under section 16-104.1 of this subtitle;

(ii) *Has been authorized by the political subdivision that operates a fire department rescue squad, emergency medical services unit, or volunteer fire department to operate the type of emergency vehicle being driven*; and

(iii) Is driving the emergency vehicle in the performance of the official duties of the driver in or out of state.

Why Class B Driver Course?
Training Requirements

§ 16-102. Persons exempt from licensing requirements

(b) Regulations.

(1) The Administration shall adopt regulations that establish *mandatory training and testing requirements* that a political subdivision that operates a fire department, rescue squad, emergency medical services unit, or volunteer fire department must implement before the political subdivision may authorize an individual to operate an emergency vehicle in accordance with subsection (a)(12) of this section.

Motivation

Medic 730
Roll-over crash

Motivation

Fatal Collision
March 29, 2005

7 civilian deaths involving Montgomery County Fire and Rescue Emergency Vehicles

Motivation

October 16, 2014
Engine 723 collides with A721

Motivation

Engine 733 loses control
May 23, 2016

STATISTICS

In 2010……

32,885 people were killed in crashes

2,239,000 people were injured

55% of passengers killed were unrestrained

Motivation
NFPA Statistics 1998-2007

- Consistently the 2nd leading cause of FF fatalities
- 148 deaths in 133 crashes in 10 years
  - 110 of the fatalities were drivers
- 80% of the crashes were during a response

Motivation

- Heavy apparatus operators make more independent decisions than any other member of the crew
  - Pre-response
  - In transit
  - Arrival
  - Operating
- Apparatus is the most valuable asset placed under your control
- Apparatus has the potential to cause unlimited liability personally and professionally

Public Image
The Washington Post

August 2004

Emergency Vehicle Crashes Worry Montgomery Officials

Firetruck, Ambulance Accidents Raise Insurance Rates

By Tim Craig
Washington Post Staff Writer

Drivers of Montgomery County firetrucks and ambulances continue to be involved in what officials regard as an alarming number of accidents, causing insurance rates to skyrocket and forcing new policies designed to slow response times to some calls.

In a stern department-wide e-mail last month, prompted by four accidents within a 26-hour period over the Fourth of July weekend, Thomas W. Carr Jr., chief of the county's career firefighters, said the drivers' performance was placing the public and fire and rescue personnel at risk.

"I am sitting in my office on July 4 thankful that I am not in the throes of planning a firefighter funeral or assisting a civilian family with their grief," he wrote. "We must break the chain and we have to do it immediately and that may take radical action. I am prepared to take action."

He added: "I am afraid we continue on the path to catastrophe."

No details about the recent accidents were available yesterday, but Carr's e-mail indicated that there were no injuries.

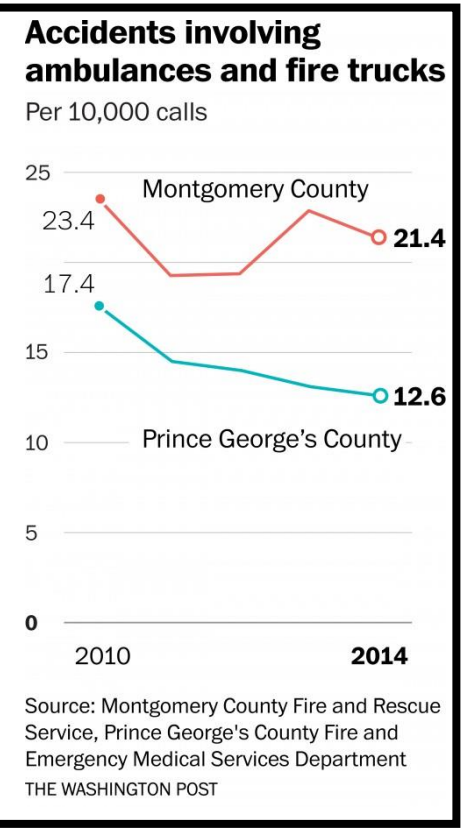
In May 2003, The Washington Post reported that Montgomery firetrucks and ambulances had been involved in 1,100 accidents in the previous five years, doing so much damage to the fleet that the department risked losing its insurance coverage.

Departmental reviews of the most serious accidents, including crashes that left one motorist dead and more than a dozen injured, found that many could have been avoided had drivers slowed before

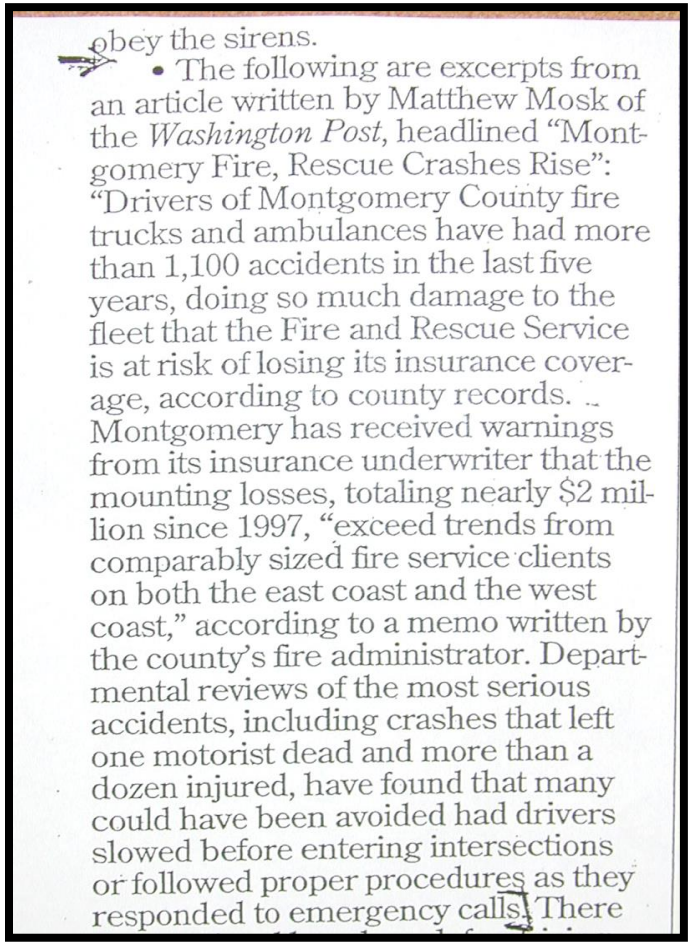
See FIRETRUCKS, B4, Col. 5

November 2015

A leading killer of firefighters: crashing the truck on the way to a call



Public Image
Firehouse Magazine



obey the sirens.

• The following are excerpts from an article written by Matthew Mosk of the *Washington Post*, headlined "Montgomery Fire, Rescue Crashes Rise": "Drivers of Montgomery County fire trucks and ambulances have had more than 1,100 accidents in the last five years, doing so much damage to the fleet that the Fire and Rescue Service is at risk of losing its insurance coverage, according to county records. Montgomery has received warnings from its insurance underwriter that the mounting losses, totaling nearly $2 million since 1997, "exceed trends from comparably sized fire service clients on both the east coast and the west coast," according to a memo written by the county's fire administrator. Departmental reviews of the most serious accidents, including crashes that left one motorist dead and more than a dozen injured, have found that many could have been avoided had drivers slowed before entering intersections or followed proper procedures as they responded to emergency calls. There

November 2003

History
Montgomery County

Logic

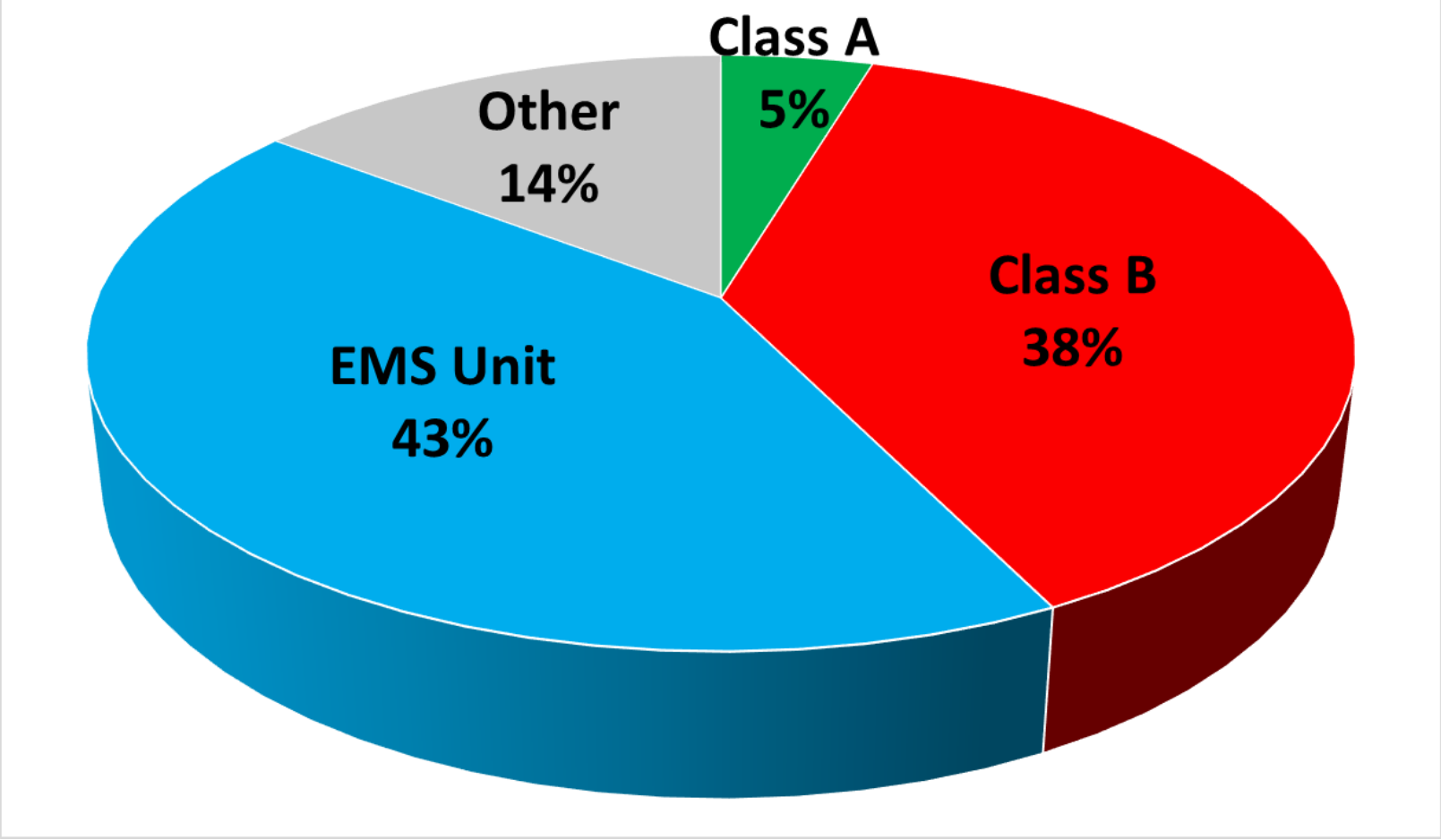
"YOU HAVE NO RIGHT TO RISK PEOPLE'S LIVES ON THE HIGHWAY TO SAVE PEOPLE WHO MAY BE TRAPPED IN A FIRE"

Controlling the Beast

- Since recruit school the emphasis has been SPEED
- When the tones drop the emphasis is SPEED
- Going down the road the emphasis is……..

Being the driver you have to learn to control the aggression and focus it in order to deliver the apparatus safely.

Statistics
Collisions by Vehicle Type – 2013-2015



Safe Driving Principles
Philosophy

We will drive safely despite the incorrect or reckless actions of other roadway users.

Assume the other driver….

….does not see you

….does not hear you

….will not yield to you

….will put their vehicle in your path

Safe Driving Principles
Responsibility

Drivers are responsible for:

- Ensuring the apparatus is ready for service
- Ensuring the apparatus is maintained and mechanically sound
- Developing and maintaining their own skills and knowledge
- Anticipating lack of skill and knowledge of pedestrians and other drivers
- Maintaining situational awareness to predict hazards and take action to mitigate them
- Knowing and complying with applicable laws and policies

REGULATORY & POLICY CONSIDERATIONS

Maryland Code – Transportation

MCFRS Policy 808

MCFRS Directive 04-21

Maryland Code – Transportation
§ 21-106 - Emergency Response

- Privileges are granted when:
  - Responding to an emergency call;
  - Responding to, but not while returning from, a fire alarm
- Privileges granted to fire department drivers are:

(1) Park or stand without regard to the other provisions of this title;

(2) Pass a red or stop signal, a stop sign, or a yield sign, **but only after slowing down as necessary for safety**;

(3) Exceed any maximum speed limit, but only so long as the driver does not endanger life or property;

(4) Disregard any traffic control device or regulation governing direction of movement or turning in a specified direction (no left turn, no u-turn, etc.)

Legal Terms

A **TRUE EMERGENCY** is a situation in which there is a high probably of death or serious injury to an individual or significant property loss, and action by (you) an emergency vehicle operator may reduce the seriousness of the situation.

-United States Department of Transportation

Maryland Code – Transportation
§ 21-106 - Emergency Response

- Privileges apply only while the emergency vehicle is using audible and visual signals
- Driver not relieved from duty of care. -- This section does not relieve the driver of an emergency vehicle from the duty to drive with due regard for the safety of all persons.

Maryland Code – Transportation
§ 21-405 & § 21-510 – Yield to emergency vehicles

On the immediate approach of an emergency vehicle using **audible and visual signals:**

- Drivers and pedestrians shall *yield the right-of-way*.
- Drivers shall drive immediately to *a position parallel to and as close as possible to the edge or curb of the roadway*, clear of any intersection.
- Drivers shall stop and stay in this position until the emergency vehicle has passed.

Maryland Code – Transportation
§ 21-706 - passing school vehicle

(a) If a school vehicle has stopped on a roadway and is operating the alternately flashing red lights, the driver of *any other vehicle* meeting or overtaking the school vehicle shall stop at least 20 feet from the front or rear of the school vehicle.

(b) If a school vehicle has stopped on a roadway and is operating the alternately flashing red lights, the driver of any other vehicle meeting or overtaking the school vehicle may not proceed until the school vehicle resumes motion or the alternately flashing red lights are deactivated.

(c) Exceptions. -- This section does not apply to the driver of a vehicle on a divided highway, if the school vehicle is on a different roadway.

Maryland Code – Transportation
§ 22-218 - Audible and visual signals

- Every emergency vehicle, in addition to any other equipment and distinctive markings required, shall be equipped with a siren, exhaust whistle, or bell capable of giving an audible signal.
- Every emergency vehicle, in addition to any other equipment and distinctive markings required by the Maryland Vehicle Law, shall be equipped with signal lamps mounted as high as practicable, which shall be capable of displaying to the front and to the rear a flashing red light or lights. These lights shall have sufficient intensity to be visible at 500 feet in normal sunlight.
- Fire Apparatus and Ambulances may be equipped with or display red and/or white lights or signal devices.

Maryland Code – Transportation
§ 21-1120 - Wearing headsets

- The wearing of earplugs, headsets, or earphones while driving a motor vehicle is prohibited under normal circumstances.
- The prohibition of headsets does not apply to a person operating an authorized emergency vehicle:
  - Under emergency conditions; or
  - Who is wearing a headset for the purpose of communicating with other emergency personnel.

Maryland Code – Transportation
§ 21-1110 - Crossing fire hose

Unless he has the consent of the fire department official in command, the driver of a vehicle may not drive over any unprotected hose of a fire department that is laid down on any highway or private driveway.

Legal Terms

- **Negligence**
  - a failure to exercise the care that a reasonably prudent person would exercise in like circumstances.
  - COMAR - Negligent driving.- A person is guilty of negligent driving if he drives a motor vehicle in a careless or imprudent manner that endangers any property or the life or person of any individual.
- **Gross Negligence**
  - a conscious, voluntary act or omission in reckless disregard of a legal duty and of the consequences to another party
- **Willful and Wanton**
  - denotes conduct that is extreme and outrageous, in reckless disregard for the rights of others

Maryland Code – Transportation
§ 19-103 - Liability for negligent operation

(b) Liability of operator. -- An operator of an emergency vehicle, who is authorized to operate the emergency vehicle by its owner while operating the emergency vehicle in the *performance of emergency service*…..shall have the immunity from liability described under § 5-639(b) of the Courts and Judicial Proceedings Article.

- Emergency Service: responding to an emergency call or fire alarm
- § 5-639 does not provide immunity from suit to an operator for a malicious act or omission or for gross negligence of the operator

Maryland Code – Transportation
Duty of Care

None of the privileges or exceptions in the statutes relieve the driver of an emergency vehicle from the duty to drive with due regard for the safety of all persons.

MCFRS References

- **Policy 808** – Safe Emergency Vehicle Operation
  - Fitness for duty
  - Vehicle preparedness
  - Driving procedures
- **Directive 04-21** – MCFRS Safe Driving Action Plan
  - Reducing response mode
  - Maximum speeds
  - EMS transport priorities
  - Collision reporting
  - Cell phone use

MCFRS Guidance
Policy 808

- During routine driving, fire apparatus has no exemptions from traffic laws
- Personnel not confident in operating a vehicle should request additional training or practice
- Drivers must not knowingly drive/operate vehicles with mechanical defects that could effect safety
  - Notify your officer
  - Consult with CMF
  - MCFRS OOS criteria

MCFRS Guidance
Policy 808

- Driver's licensing
  - Must possess a valid non-provisional motor vehicle operator's license
  - License status changes (revocation, suspension, disqualification, downgrades) must be reported to a supervisor and cease driving fire apparatus
  - Convictions for any moving violation must be reported to a supervisor
- Fitness for duty
  - Physical conditions
  - Medications
  - Fatigue or psychological impairments

MCFRS Guidance
Policy 808

Apparatus drivers must:

- Strive to eliminate their own errors and allow for lack of skill or improper actions of other drivers
- Adjust to unusual weather, road and traffic conditions, and avoid being led into collisions by unsafe acts by others
- Recognize situations that lead to collisions, identify prevention options, and execute options to avoid collisions
- Remain accountable for their actions and operate within acceptable policies, procedures, and laws

MCFRS Guidance
Policy 808

- Intersections
  - Must reduce speed at all intersections to negotiate a full stop when the intersection cannot be safely entered
  - Speed must allow the vehicle to remain fully controlled and safely stopped to avoid a collision
  - Drivers must anticipate the need to yield to any vehicle already in any part of the intersection when responding against a red light
  - Right-of-way may have to be yielded to avoid a collision

Statute and policy do not require a full *stop*, however *you must slow down* to be able to stop.

MCFRS Guidance
Policy 808

- Following other apparatus
  - At least 3 seconds interval
    - ✚*Vary your siren pattern*
    - ✚*Traffic assumes there is just one emergency vehicle*
- Night driving
  - Stopping distance must be within the forward view of the vehicle headlights – do not outdrive the sight distance
- Pedestrians
  - Always have the right-of-way
    - ✚*Statute requires pedestrians to yield, however you are obligated to avoid a collision even if right-of-way has to be given away*

MCFRS Guidance
Policy 808

- Drive to accommodate the unpredictable behavior of other drivers
- Vehicle clearance and height
  - Know your vehicle
  - Avoid tight clearance situations when possible
  - Officer must dismount and guide the driver in tight clearances
- Drivers must be aware of vehicle height, weight, and ground clearance

MCFRS Guidance
Policy 808

- Overhead Doors
  - Never enter an opening with a moving overhead door
  - Never stop or park in an overhead door opening
  - Never activate an overhead door with a vehicle in the opening
  - Never activate an overhead door without a full view of the vehicle and door by either the door operator or a spotter

✚*Do not rely upon automated sensors to stop overhead doors*

✚*Assume all overhead doors are on a timer*

✚*In an unfamiliar station, determine the operating characteristics of the overhead doors during shift change*

MCFRS Guidance
Policy 808

- Parking
  - During emergencies or fire prevention activities – use fire lanes or unconventional spaces when other spaces are not available
  - All other times – use regular parking spaces
  - ✚During non-emergent situations, park to avoid backing or becoming trapped by other vehicles
  - ✚Use the less congested areas of parking lots or streets around businesses to minimize conflict with other vehicles
- Alleys, Driveways, or Buildings
  - Stop immediately prior to driving onto a sidewalk or roadway
  - Yield to pedestrians and vehicles

MCFRS Guidance
Policy 808

Backing

- Unit officer must dismount to the driver's side rear of the apparatus
- Unit officer will establish eye contact with the driver – if lost the vehicle must stop
- Additional personnel may be positioned to assist
- Use of spotters does not relieve the driver of responsibility for safe vehicle operation

MCFRS Guidance
Policy 808

Backing

- If no spotter is available, the driver must conduct a circle check before backing
- EMS units must use spotters if possible, including at hospitals
  - If not spotter is available, driver must conduct a circle check
- All vehicles must use a spotter or the driver must conduct a circle check except for passenger size vehicles
  - Staff cars, command buggies, brush trucks
- Spotters must use standardized hand signals

MCFRS Guidance
Policy 808

- Responding units must not pass each other unless advised to do so by the lead unit
- Responding units may not pass a school bus that is displaying flashing red lights – establish eye contact with the bus driver and proceed only at their direction
- During all travel, apparatus must stop at all unguarded railroad crossings
  - Guarded and unguarded crossings require looking and listening for train traffic before proceeding

MCFRS Guidance
Policy 808

- During emergency response, units must allow sufficient distance between responders based upon road conditions, traffic, etc.
  - Beware that motorists who yielded to another responder may not yield to you!
- During emergency response, drivers may exercise the privileges granted to them by statute when:
  - Ensuring the safety of persons and property, and
  - Weather conditions and visibility provide an adequate field of view

MCFRS Guidance
Policy 808

- Drivers need to know their area
  - Be aware of the running routes of other responding units – anticipate intersecting paths
  - Know areas that require special consideration – dips, hills, intersections, gridlock areas, steep changes in grades, construction or detours, weight restrictions, height restrictions, school zones
- Slow down while approaching the scene!
  - Let the officer complete a size-up
  - Identify an advantageous position for the apparatus
  - Bystanders will be distracted by the incident

MCFRS Guidance
Policy 808

- Personnel must not mount or dismount moving apparatus.
  - Officers and drivers are responsible for passengers being seated and/or restrained before moving
  - Riding the tailboard is forbidden
- Headlights are to be used during emergency responses and when windshield wipers are needed
- Driving with snow chains
  - Adhere to the speed guidelines provided by the chain manufacturer
  - Open the cab windows at least 3”
  - All crew members need to listen for broken chains
  - Broken chains require the unit to stop and repair or remove the broken chain

MCFRS Guidance
Policy 808

- Wheel chocks must be used whenever parked anywhere outside of the station
  - Passenger size apparatus may use parking brakes in lieu of chocks
  - On grades, turn wheels toward the curb
- Daily apparatus checks should ensure compartment doors, cab doors, loose tools and equipment are secure to prevent loss or damage during travel
- Functional checks of visual and audible emergency equipment should be done in a manner that does not confuse passing motorists
  - Check warning lights indoors with the bay door down
  - Sound audible devices for a short duration with the warning lights off

MCFRS Guidance
Directive 04-21

- Unit officers on the scene of “routine” incidents should consider reducing incoming units to non-emergency response
- Unit officers are responsible for the driver’s actions
  - Direct the driver to slow down
  - Direct the driver to cease unsafe operations
  - Authority to discontinue a response if necessary
- MCFRS drivers may not exceed the posted speed by more than 15mph at any time during emergency responses

MCFRS Guidance
Directive 04-21

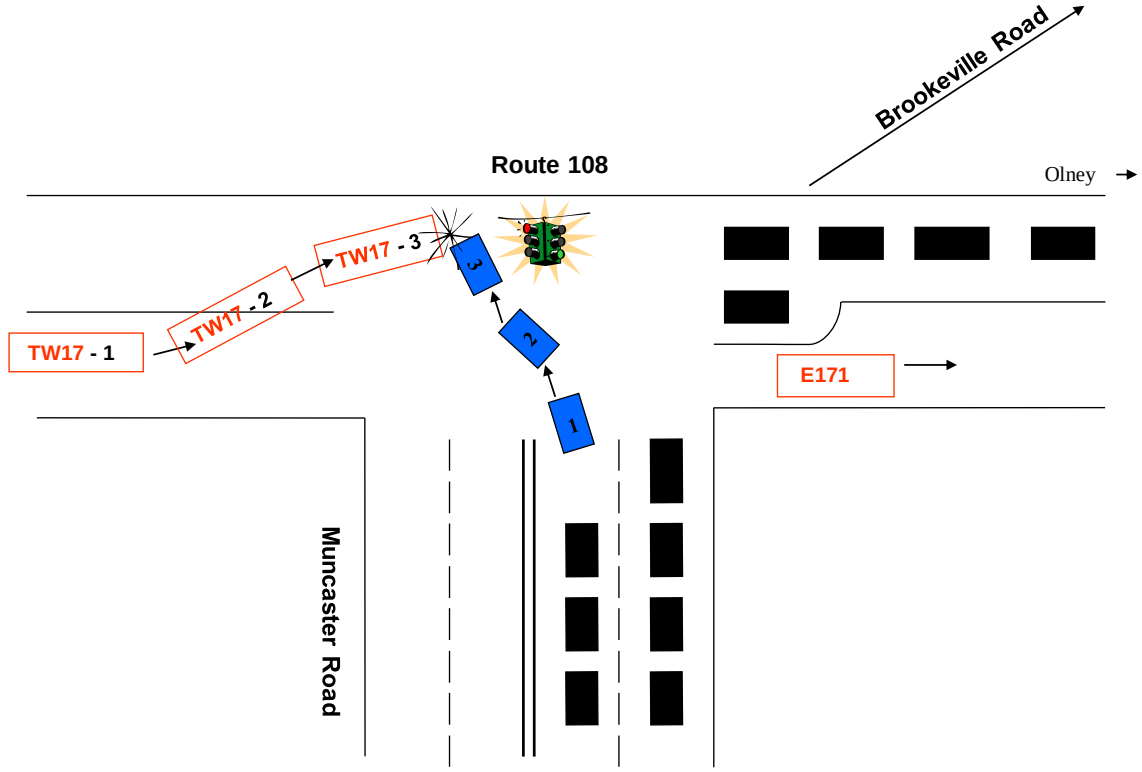
- During emergency responses drivers must be able to come to a complete stop at all intersections to avoid a collision
- All personnel in MCFRS vehicles must wear seatbelts
  - Unit officers are responsible for authorizing movement of the vehicle
- All MCFRS vehicle collisions must be reported immediately by the investigator to the Safety Office
  - Safety Officers
  - Battalion Chiefs
- Cell phone use while operating medium or heavy duty apparatus is forbidden

MCFRS CASE STUDY

Tanker 717 Collision

Tanker 17 – Fatal Collision
June 22, 2000

- Multiple responding units
- Zone of confusion
- Evasive maneuver




LAYTONSVILLE
VOL. FIRE DEPT.
DO NOT RIDE
ON REAR STEP
YARD SALE


WEST
EAST
108
108
LAYTONSVILLE
VOL. FIRE DEPT.
DO NOT RIDE
ON REAR STEP
OPEN

MONTGOMERY COUNTY MARYLAND
GARDEZ BIEN
FIRE & RESCUE
DRIVER TRAINING

SAFE DRIVING PRACTICES

Driving safely despite the actions of others

Smith System & SIPDE

Safe Behaviors

Collision Reduction

What makes a safe driver?

A safe driver knows……

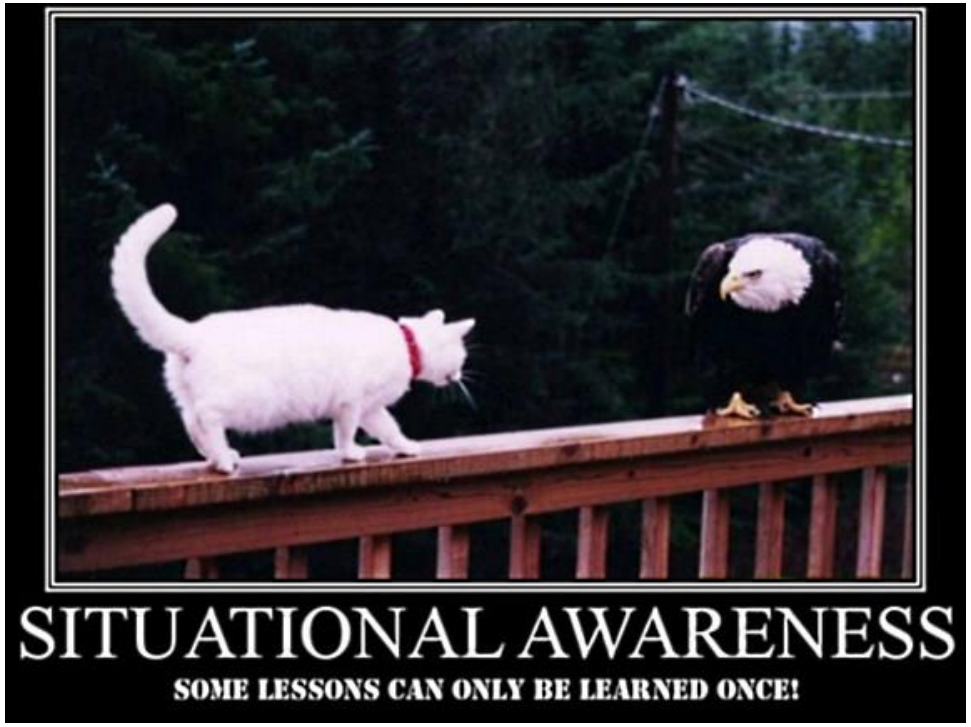
What to do

How to do it

When to do it

Situational Awareness

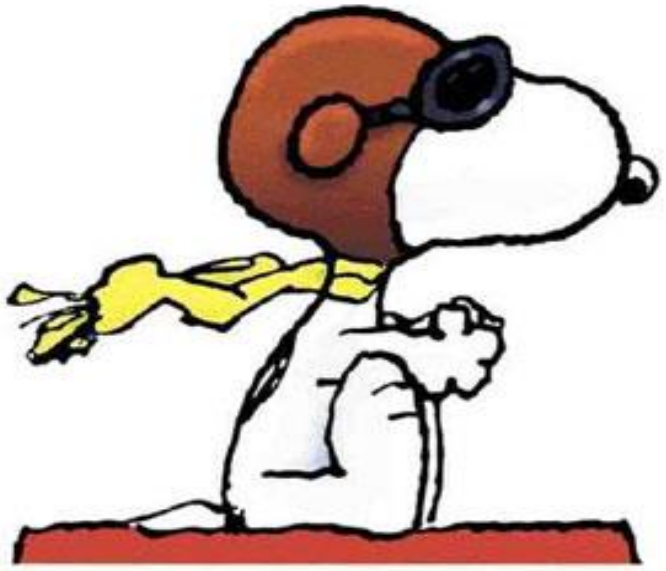
- Accurate perception and understanding of all the factors and conditions within the four fundamental risk elements that affect safety before and during travel
- Fundamental Risk Elements:
  1. the driver
  2. the vehicle
  3. the environment
  4. the type of operation



The Driver

- Mental preparedness
  - Are you focused?
  - Are you stressed?
- Physical preparedness
  - Are you tired?
  - Are you handicapped?
  - Are you sober?

YOU control this element!



The Vehicle

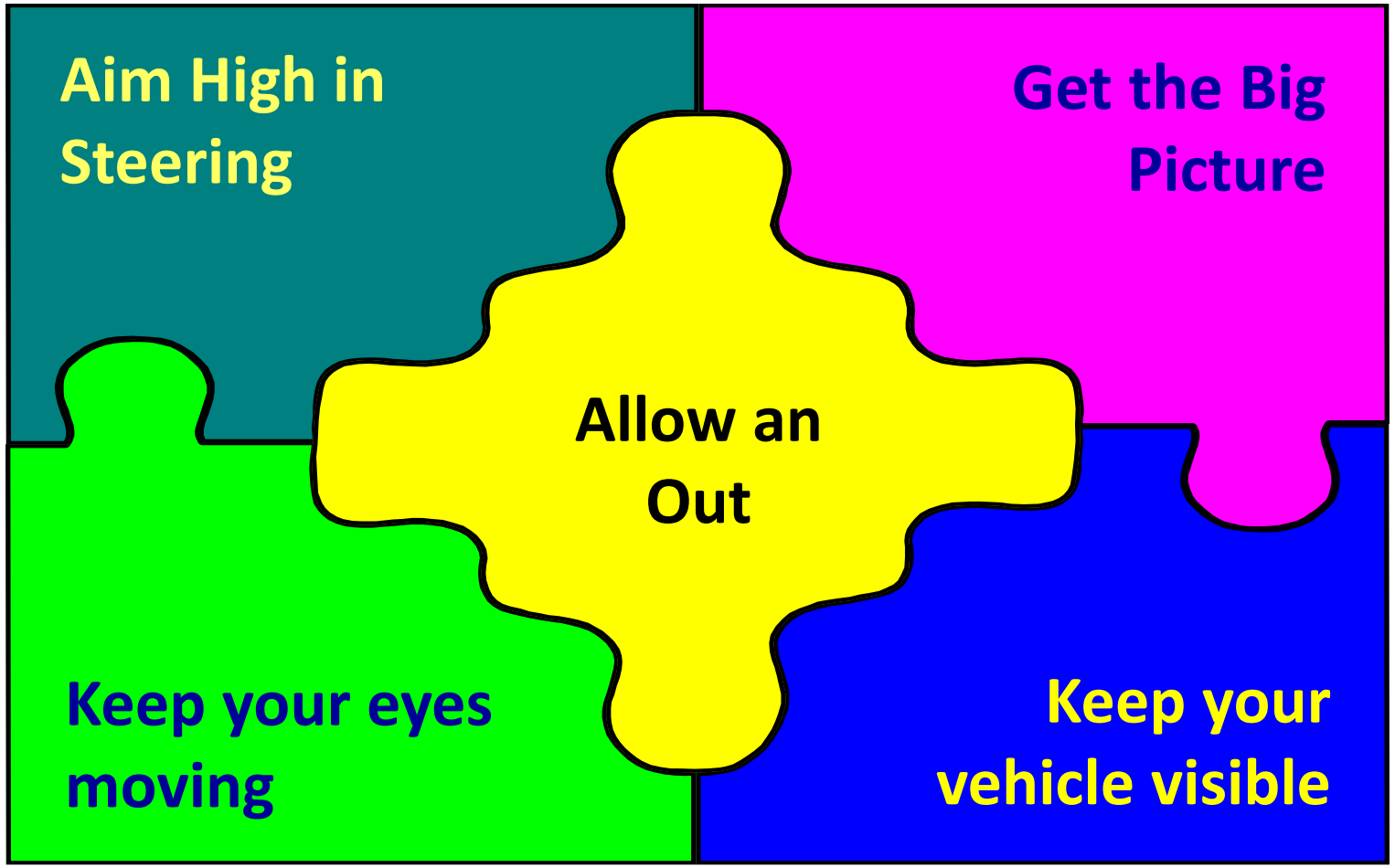
- Mirrors intact and adjusted
- Seat intact and adjusted
- Pre-Trip Inspection done
- Interior housekeeping
  - Portable radios
  - Helmets
  - Map books
  - Drinks
- Cargo secure

YOU control this element!

The Environment and Operations

- Surroundings/Setting
- Weather
- Road configuration
- Road conditions
- Traffic conditions
- Vehicle interior and accessories
- Parking

Smith System



Aim High
Smith System

- Look at the area 8 to 12 seconds ahead of your vehicle
- Center your vehicle in the driving lane
- Find the path of least resistance
- Adjust your following distance
- Blend into the flow of traffic

Get the Big Picture
Smith System

- Know what is ahead, beside, and behind you
- Predict other drivers' actions
- Hear the radio traffic
  - What other units are enroute?
  - Are there other calls in the same area?
  - Is there a true emergency?
- Listen for other sirens
- Find trouble before it finds you

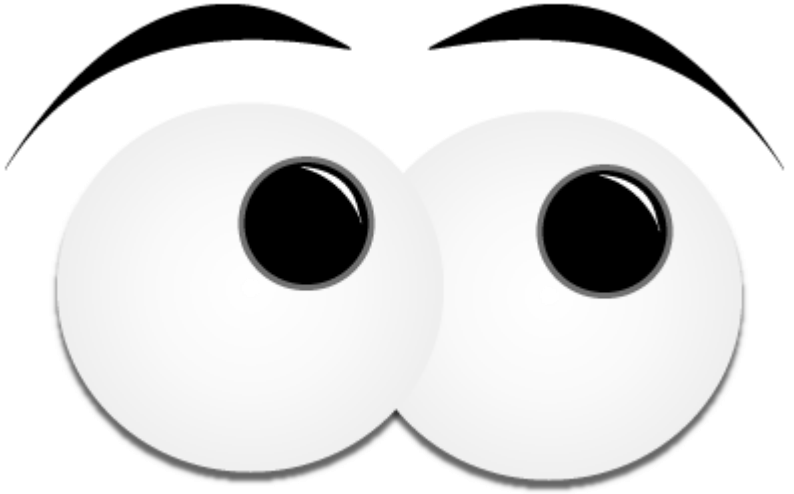
The "big picture" is vital to safe driving

Beside and Behind You
The Big Picture

- Always know what's happening beside you
- Check mirrors before slowing down, stopping, decelerating
- Check mirrors on long or steep hills
- Convex mirrors tell a bigger story
- Depth perception can be altered by mirrors
  - Know landmarks on the apparatus to aid with depth perception

Keep Your Eyes Moving
Smith System

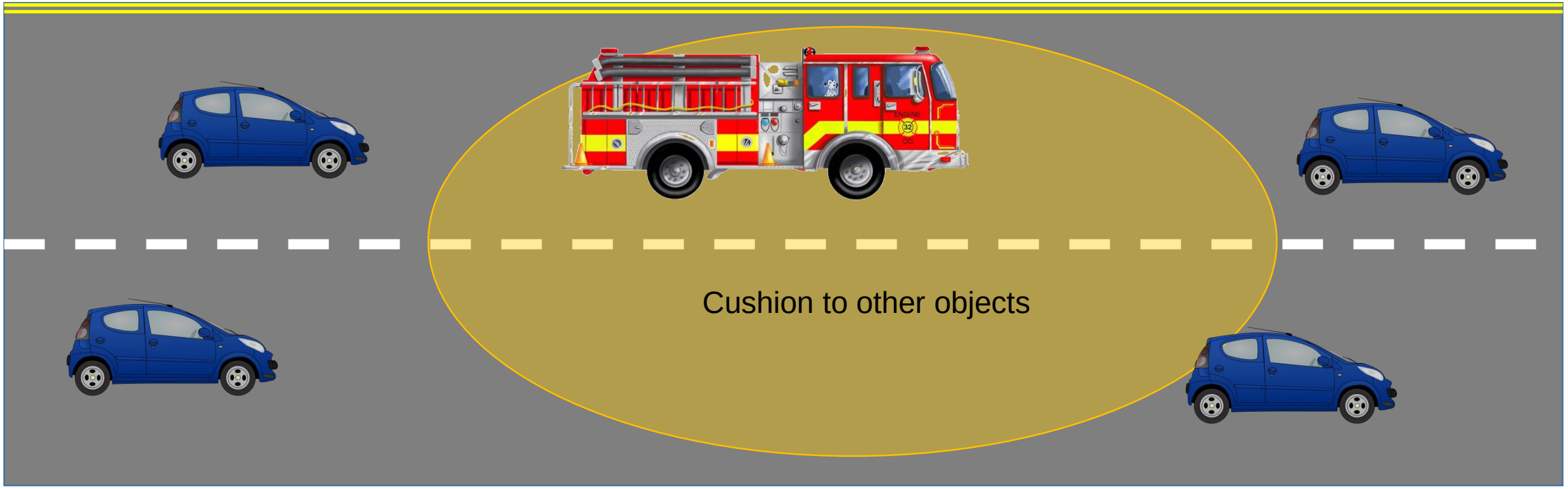
- Do not fixate on one area or object
- Key to remaining alert and engaged
- Check the mirrors frequently
- Becomes difficult at night or when fatigued
- Random eye movement is bad
- Staring at an object also leads to drifting toward the object



Allow an Out
Smith System

- Maintain adequate following distance
  - "Decision Space"
- Be prepared to yield
- Don't get boxed in
- Time your passing moves
- When stopped in traffic, keep a gap ahead of you to allow a lane change

Decision Space
Allow an Out



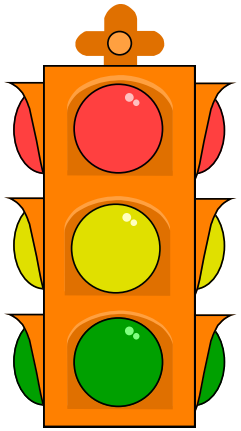
Impossible in the DC Metro area?

Decision Space
Allow an Out

Perception Time +

Reaction Time +

Braking Time =



Stopping Distance

Perception	$^3/_8$ to $^3/_4$ second
Reaction	$^3/_4$ second
Add ½ to 1 second for air brake lag time	
Braking	2 ½ seconds
Stopping Time	5 seconds

Based upon 40 mph on wet roads.

Stopping Distance
Allow an Out

Dry road; 25mph = 38 ft/sec

Perception	Reaction	Braking	≈	Stopping Distance
28 ½ feet	66 ½ feet	32 feet		127 feet

Wet road; 25mph = 38 ft/sec

Perception	Reaction	Braking	≈	Stopping Distance
28 ½ feet	66 ½ feet	56 feet		151 feet

Dry road; 40mph = 59 ft/sec

Perception	Reaction	Braking	≈	Stopping Distance
44 ¼ feet	103 ¼ feet	78 feet		225.5 feet

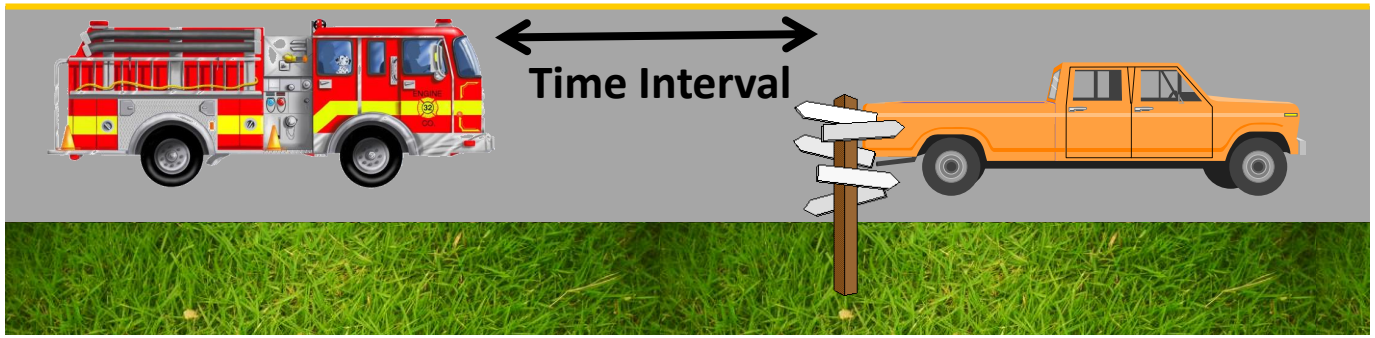
Stopping Time – Air Brake Unit
Allow an Out

Vehicle Speed		Dry Pavement Coefficient of Friction = 0.7		Wet Pavement Coefficient of Friction = 0.4	
MPH	Ft/S	Stopping Distance	Stopping Time	Stopping Distance	Stopping Time
60	90	407 ft	4.5 sec	542 ft	6 sec
45	66	262 ft	4 sec	336 ft	5 sec
35	51	185 ft	3.6 sec	229 ft	4.5 sec
25	38	127 ft	3.4 sec	149 ft	4 sec

How do you measure your decision space?

Decision Space – 4 Second Rule
Allow an Out

<40mph	4 seconds
Each additional 10mph	1 second
Poor Road Conditions	1 second



Apparatus traveling on wet pavement at 60mph

- 4 seconds
- 1 second
- 1 second
- 1 second

= 7 seconds

Decision Space
Allow an Out

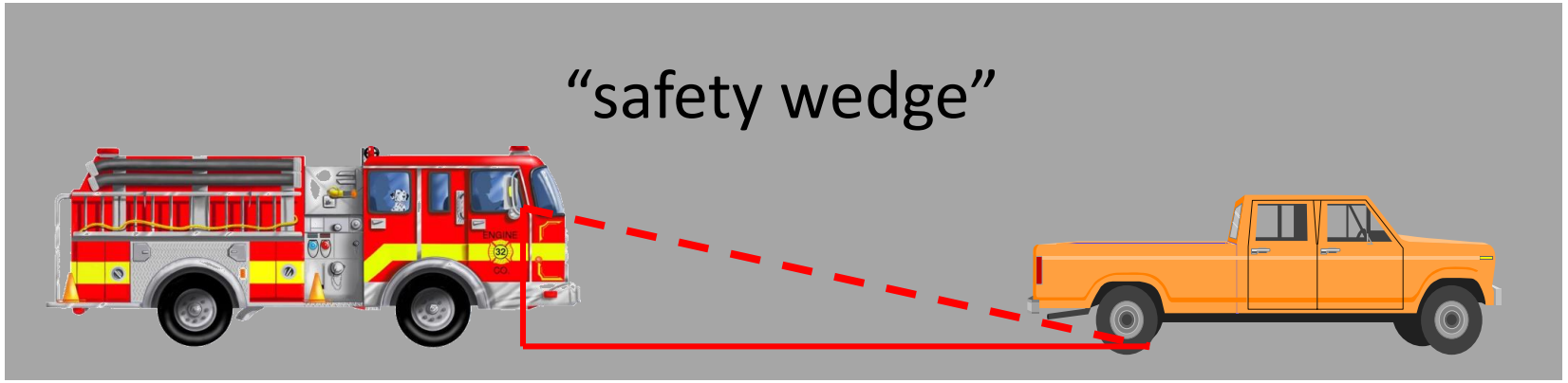
Vehicle Speed	Dry Pavement	4-Second Rule	Wet Pavement	4-Second Rule
MPH	Stopping Time	Interval Time	Stopping Time	Interval Time
60	4.5 sec	4+1+1 = 6 sec	6 sec	4+1+1+1 = 7 sec
45	4 sec	4+1 = 5 sec	5 sec	4+1+1 = 6 sec
35	3.6 sec	4 sec	4.5 sec	4+1 = 5 sec
25	3.4 sec	4 sec	4 sec	4+1 = 5 sec

In each situation you have enough time to perceive the hazard, react, and stop.

Decision Space
Allow an Out

Even when stopped, leave sufficient space between your vehicle and the vehicle ahead:

- Vehicle in front starts to roll back
- Car behind needs more space to stop
- Car ahead becomes disabled
- You get a call!



Keep Your Vehicle Visible

Smith System

- Know where you are going
- Pick a lane early and stick with it
- Signal your intentions
- Make eye contact
- Pay attention
- Slow down ahead of gridlock

SIPDE

- Sense
  - You need to see/hear/smell/feel it
- Identify
  - Your brain needs to recognize it
- Predict
  - Your brain needs to figure out what is going to happen
- Decide
  - What are your options based upon your prediction?
- Execute
  - Make it happen

Decision Making

Safe Behaviors
Backing

- Planning ahead to minimize backing
  - Eliminate the need to back – find another route
  - Position to back to open areas or away from obstacles
  - If you can avoid backing, don't do it!
- As you pull into an area, notice landmarks or obstacles that will be behind you when backing
- Avoid backing into open roadways or uncontrolled traffic
- Backing needs to be smooth and methodical
  - Steering and pivot points will be much more pronounced when in reverse

Safe Behaviors
Backing

- Spotter priorities – rear driver's side ➔ front curb side ➔ rear curbside
- If there is no spotter available:
  - Reconsider backing up. Is it really necessary right now?
  - Make a reasonable attempt to get someone to act as a spotter.
  - If a spotter cannot be obtained, get out the unit and walk around the unit completing a "circle of safety" and survey the backing area. Before proceeding to back unit, being sure to also check overhead clearance.
- Give a final warning of two horn blasts just prior to backing.
- If you lose sight of spotters – STOP
- The best spotter is another apparatus operator

Safe Behaviors
Backing

Before and during backing the driver should:

- Roll down their window
- Remove their headset
- Give clear directions to the backers
- Go only as fast as the backers can adjust
- Check both mirrors and the backup camera – do not fixate
- Back only as far as necessary

Safe Behaviors
Backing

Effective spotters:

- Know the intended path of the vehicle
- Maintain eye contact with the driver and know the blind spots
- Remain focused on the task and take it seriously
- Look behind, around, below, and above the vehicle
- Wear traffic vests and carry handlights
- Recognize stopping distance requires reaction time and braking distance – signal before it is too late!
- Use visible, clear, and recognized hand signals
- Stop the driver if uncertainty develops

Safe Behaviors
Backing

- Effective spotters:
- Conduct a circle check of the vehicle before starting the maneuver
- Identify and communicate any potential obstacles or hazards to the driver
- Position themselves 8-10 feet away from the apparatus and in the line of sight of the driver
  - Avoid being in pinch points between the apparatus and fixed objects
- Use a talk-around channel when conditions make verbal communications between the driver and the ground personnel important, i.e. low-visibility, complex maneuvers, confined areas

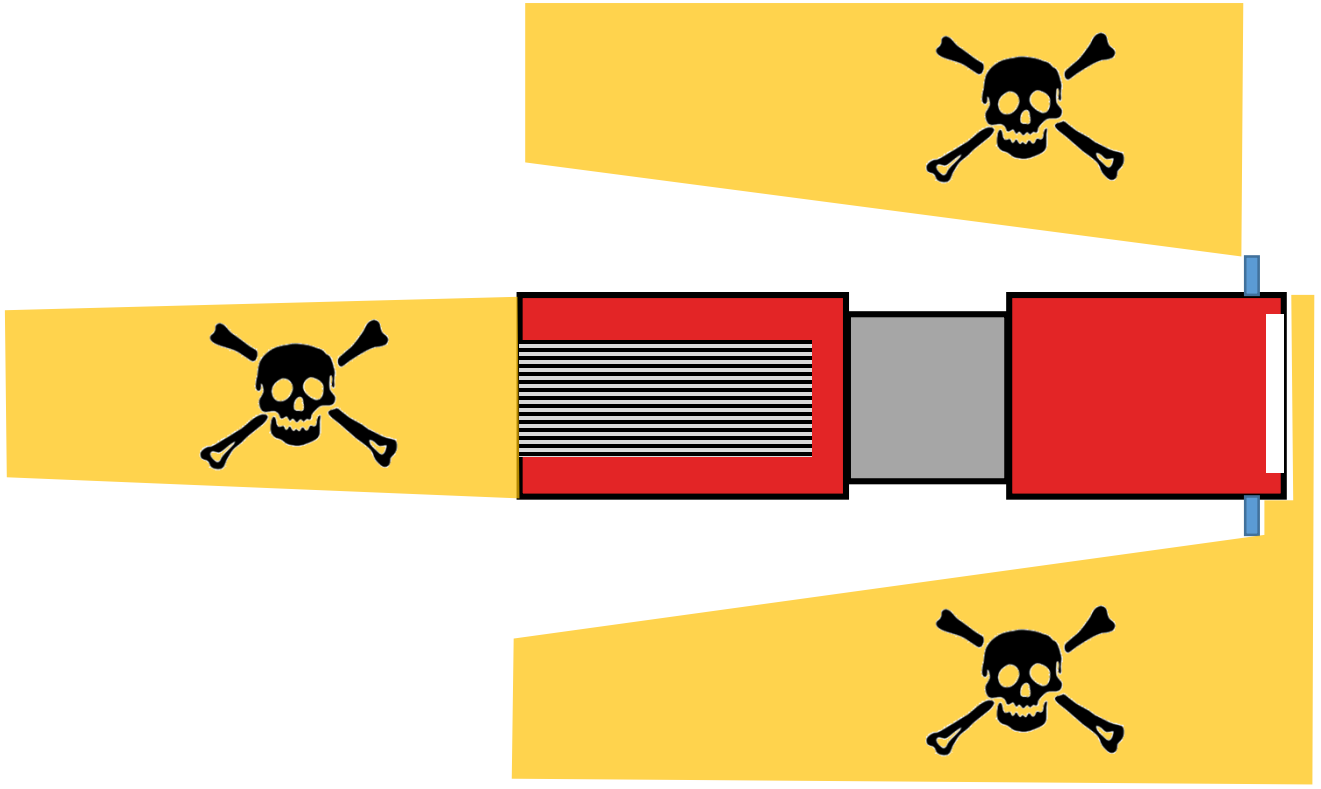
Backing
Standard Hand Signals

STOP

TURN

DIMINISHING CLEARANCE

Safe Behaviors
Apparatus Blind Spots

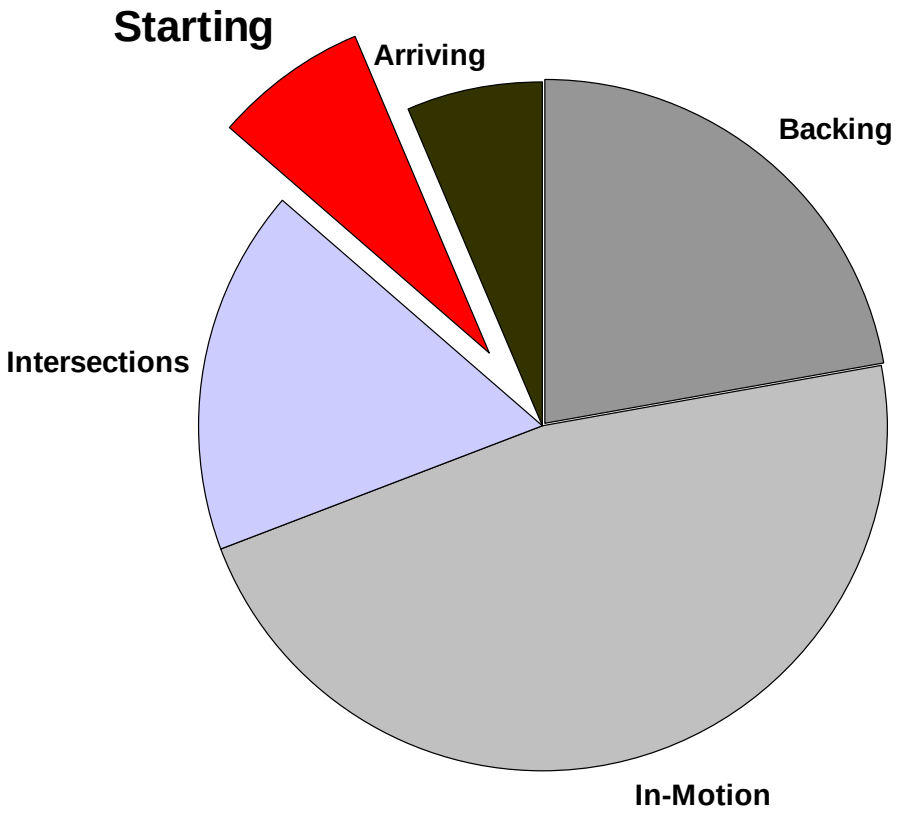


If you cannot see the driver, they cannot see you!

If you can see the driver, do not assume they see you!

Collision Reduction
Pre-Departure & Departure

- Daily Apparatus Check
- Circle Check
- Adjustments
- Seat Belts
- Visual Scan



Pre-Trip
Pre-Departure

- Starts at shift change
  - What have other shifts already discovered?
  - Defect reports
- Identifies defects
  - Non-critical – operator adapts
  - Critical – unit OOS?
- Address minor deficiencies
- Mirror & seat adjustments
- Documentation

Adjustments & DOT Inspection
Pre-Departure

- Seat position
- Steering wheel position
- Mirrors
  - Flat
  - Spot
  - Clean?
- Windows
  - Clean inside
  - Clean outside
  - Free of obstructions or defects?
- Rear spot lights
- Functional and physical checkout of major components (Session 2)

Circle Check - 360°
Pre-Departure

- Sides
  - Compartment doors
  - Ladders
  - Running boards – loose items
  - Portable radio straps
- Front & Rear
  - Hose & Nozzles
  - Appliances/Humat Valves
  - Loose items and people
- Below
  - PPE
  - Obstructions or forgotten equipment
  - Wheel chock
- Takes seconds to save minutes

Collision Reduction
In Transit

- Departure visual scan
- Eye movement
- Cover the Brake
- Safe Speed
- Railroad Crossings
- Steering
- Signaling
- Traffic Signs & Signals

Departure - Visual Scan
In Transit

- Complete a visual scan of the field of vision before moving
  - Pedestrians
  - Other apparatus
  - Civilian vehicles
  - Station personnel
- Ensure the bay door is fully open
  - Collision sensors are no help when door is going up
- Proceed slowly through the door opening
  - Note blind spots outside the door
  - Door frame creates a pinch point

Eye Movement
In Transit

What do you see?

What are the hazards to your apparatus?

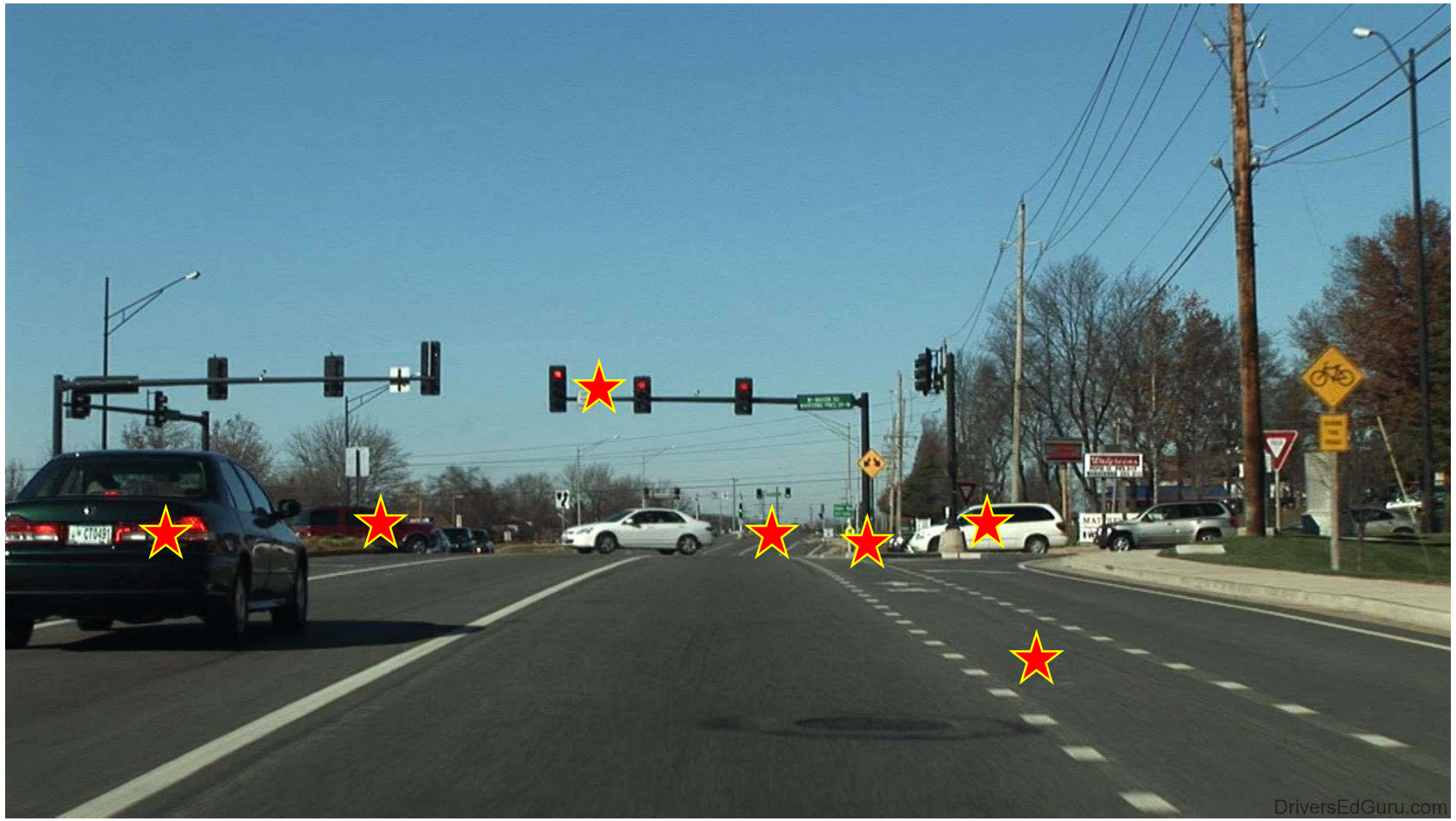
Eye Movement
In Transit

Eye Movement
In Transit

What do you see?

What are the hazards to your apparatus?

Eye Movement
In Transit



Cover The Brake
In Transit

- Cover the brake when you identify a probable hazard
- Approaching, entering, or traversing intersections
- Remove foot from accelerator and prepare to brake
- Advantages
  - Immediately decreases speed – Telma engages
  - Stopping distance decreases
  - Reduces reaction time
  - Requires a pause to accelerate

Safe Speed
In Transit

- Posted speed limits are for good conditions
- Slow for less than ideal conditions
- Smooth acceleration and deceleration
- Maintain adequate space cushions
- Your best defense is to **SLOW DOWN**

Posted speed limits are for ideal conditions

Railroad Crossings
In Transit

- MCFRS policy requires stops at unguarded crossings
  - Approach guarded crossings with skepticism
- Stop, look, and listen in both directions
- Trains may travel in either direction on all tracks
- Wait a moment to proceed after a train passes
- Never park or stop on train tracks
- More than one railroad or agency may operate on a set of tracks
  - Halting train traffic may be difficult

Steering
In Transit

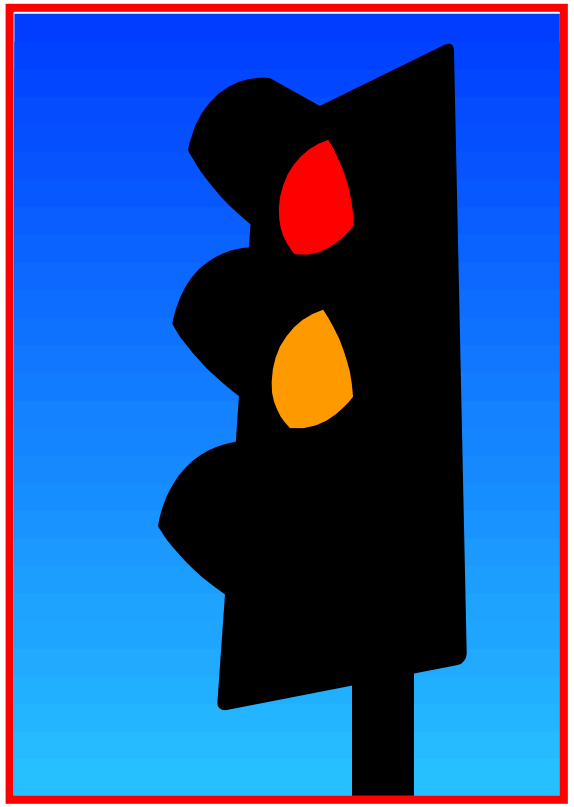
- Hold steering wheel firmly
- Two hand skill – shuffle steer
- Hands positioned at 10 and 2
- At-Risk Behaviors to avoid
  - Hands in the spokes
  - One-handed steering
  - 360° heel turning – “palming”
  - Elbow steering
  - Finger steering
  - Knee steering

Signaling Your Intentions
In Transit

- Signal before any change of direction
- Signal early
- 3 blinks before lane change
- Assure that your turn signal is off after the turn

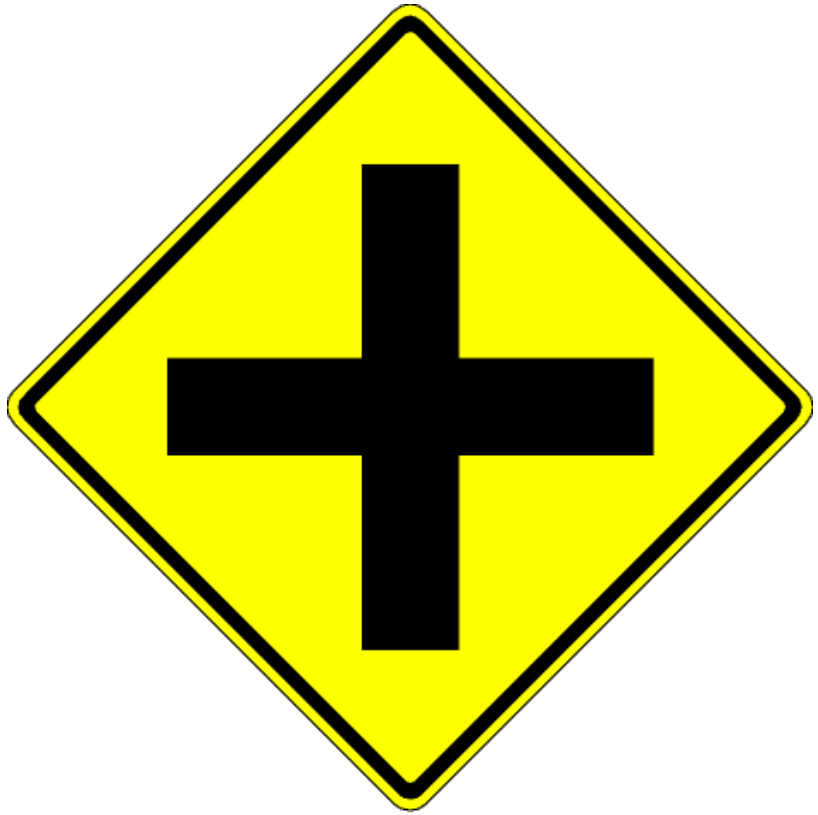
Traffic Control Devices
In Transit

- Stale green
- Stale yellow
- Flashing yellow means proceed with caution
- Flashing red means stop before proceeding
- Yield sign
- Stop sign
- Four-way stops



Intersection Behaviors

- Cover the Brake
- Eye Movement
- Reduce Speed
- Making entry
- Jumping
- Clear Space
- Other units



Most likely location for an apparatus crash.

Reduce Speed
Intersections

- One of the best proactive driving tactics is to reduce speed
- Adjust your speed to the available space cushion
  - Intersections are fixed object that as you close the gap you need to also reduce the stopping distance
- Reducing your speed gives other vehicles time to react to your approach
  - Let the play develop

Making Entry
Intersections

- Entry occurs as soon as your front bumper crosses into cross-traffic
- If you cannot positively identify that right-of-way has been yielded to you, you must stop
  - Must do this for each individual lane
- Make eye contact with other drivers
  - Are other cars “acting” like they see you?
- Even when entering with the green light remain vigilant of other vehicles entering the intersection
- Avoid using the apparatus as a moving roadblock – this is aggressive driving

Jumping Intersections

- Operator depresses the accelerator hard from stopped position
- Vehicle jerks or jumps forward
- Hard on the apparatus
- At-risk for rear-end collision
- Jumps before other vehicle moves forward is a common low speed, at-fault collision
- Smooth starts allow for decision space

Other Units
Intersections

- Zone of confusion - Created by two or more emergency vehicles responding together
- Civilian driver sees one emergency vehicle, but hears a different one at the same time
- Civilian driver thinks the coast is clear but pulls into your path
- Elderly and teenagers
- High-risk situation
- Anticipate other vehicles to make mistakes

Other Units
Intersections

- Anticipate other drivers to make mistakes
- Demonstrate care for other vehicles
- Driving tactics for procession style response:
  - Travel single file. A larger vehicle leads. Leading vehicle creates a path.
  - Increase space cushions. NEVER travel nose to tail.
  - Each vehicle must traverse intersections alone and make eye contact with other drivers. Trailing vehicles NEVER bust the intersection.
  - Use contrasting siren tones. Switch to electronic siren with alternating or pulsing tone.

Collision Reduction
Arriving

- Deceleration
- Finding the address
- Apparatus positioning
- Parking

Deceleration
Arriving

- Allow the auxiliary braking systems to work
- Hard stops
  - Harsh on apparatus, equipment, crew, patient
  - Indicates operator was not scanning ahead
- Smooth deceleration stops
  - Plan ahead
  - Good visual lead time – ¼ mile ahead
  - Pick your stopping point on horizon
  - Decelerate early

Finding the Address
Arriving

- Common at-risk driving behavior is passing the address
  - U-Turns in traffic
  - Backing against traffic
  - Operator gets frustrated
- Preplan & teamwork
- Know block numbers
- Know the cross street before the target block or identify “catching features”
- Reduce speed on the target block
- Use scene lighting
- Stop and read the map book

Apparatus Positioning
Arriving

- Approach the final spot slowly
- Spot for tactical advantage
- Leave clear space around vehicle
- Compartment doors
- Walking paths
- Outriggers
- Drive out instead of back out
- Leave access for incoming companies

Apparatus Positioning
Maryland Code - § 21-405

(e) Unless otherwise directed by a police officer or a traffic control device, when an emergency vehicle using any visual signal is stopped, standing, or parked on a highway, the driver of a motor vehicle approaching the emergency vehicle from the rear shall:

(1) make a **lane change** into an available lane not immediately adjacent to the emergency vehicle; or

(2) **slow to a reasonable** and prudent speed that is safe for existing weather, road, and vehicular or pedestrian traffic conditions.

Apparatus Positioning
Driver Considerations

- Assume passing motorists do not see the apparatus or the personnel on the roadway
- Situational positioning
  - Action areas
  - Cast a large shadow
  - Pump panel area
  - Smoke conditions
  - Hazmats
- Do you need to be on the road at all?

Parking
Arriving

- Come to a complete stop
- Transmission to neutral
- Set the spring brake
- Place a wheel chock
  - Redundant parking brake
  - Downgrade side
  - Required for parked vehicles either attended and unattended
  - Light vehicles can use parking brake
  - Turn wheels toward curb
  - Mark of a professional operator

Seat Belts

- All crew members seated and restrained
- Members having trouble
  - Practice getting dressed
  - Practice buttoning up while seated and belted
  - Practice donning SCBA from the seat
- 76% of firefighters killed in vehicle crashes were unrestrained

Safe Behaviors

- Officer operates the siren, radio, and auxiliary functions of the truck – driver focuses on driving
- Officer assists with routing
- Officer manages the MDT
- Officer assists with spotting for the driver
  - Intersections
  - Backing
  - Addresses and street signs
- Crew keeps chatter in the headsets to a minimum during responses

Safe Behaviors

- Wear your seatbelt – encourage your crew to wear theirs
  - Seatbelt alarms are an avoidable distraction
- Complete your 360° check
- Drop a wheel chock
- Use the headsets to hear and be heard
- Remove the headset when backing or being directed by people on the ground
- When in doubt – stop, get out, and look for yourself

ATTITUDE

- Arrive safely despite the incorrect or unexpected actions of others
- The right of way isn't yours until it is given to you
- Knowledge and skill are cancelled out by the wrong attitude

The public has high expectations of the fire service.
It must be your desire to meet them.

PRACTICAL SKILLS

Cone Course

Pre-Trip

Road Driving

Practical Exercises

- Pre-trip Inspection & Brake Test
- Controlled Course
  - Pivot Point Figure 8
  - Parallel Parking
  - Diminishing clearance
  - Confined space turnaround
  - Offset Alley
  - Alley dock
  - Serpentine
- Public Roadway - Driving Behavior

Practical Exercises
Pre-Trip & Brake Test

- PAGS – Pre-Trip Inspection
  - The candidate will explain the purpose of and perform a pre-trip inspection on the vehicle.
  - The pre-trip inspection will be completed in accord with Maryland Commercial Motor Vehicle Guidelines.
- PAGS – Brake Test
  - Candidate will conduct a pre-trip check of the vehicle air brake system per MVA guidelines in the order shown on the PAGS.

Practical Exercises
Controlled Course

- Purpose is to familiarize you with the turning characteristics, dimensions, and visibility of heavy apparatus
- Performed under ideal conditions in a controlled area
- Similar obstacles in the “real world” require greater assessment and pose much greater consequences if you make a mistake
- Focus on vehicle position, proper hand and body position in the cab, and mirror use
  - Learn to set yourself up for the next move
  - Gain depth perception and blind spot awareness
- Successful completion:
  - Zero cones struck
  - <10 minutes

Practical Exercises
Controlled Course

- All students and instructors on the course must wear high-visibility attire
  - Must include reflective for night driving
- No students on the course unless driving or spotting
- Speeds below 15mph
- No horseplay, reckless driving, or other unprofessional behavior will be tolerated

Consider the cone course area an IDLH – respect it as such

Practical Exercises
Controlled course

- Dress appropriately for the weather – you will be outdoors
  - Wear layers that you can shed while driving
- Stay hydrated and nourished
  - Bring a water bottle
  - Meal breaks are one hour
- If you see something – say something
  - Alert the instructors to safety issues
  - Alert the instructors to mechanical issues or warning lights on the vehicles

Practical Exercises
Pivot Point and Parallel Parking

- Students become initially familiar with the dimensions and pivot points of the vehicles
- Vehicles differ due to steering cramp angle, wheelbase, number of axles, and vehicle width

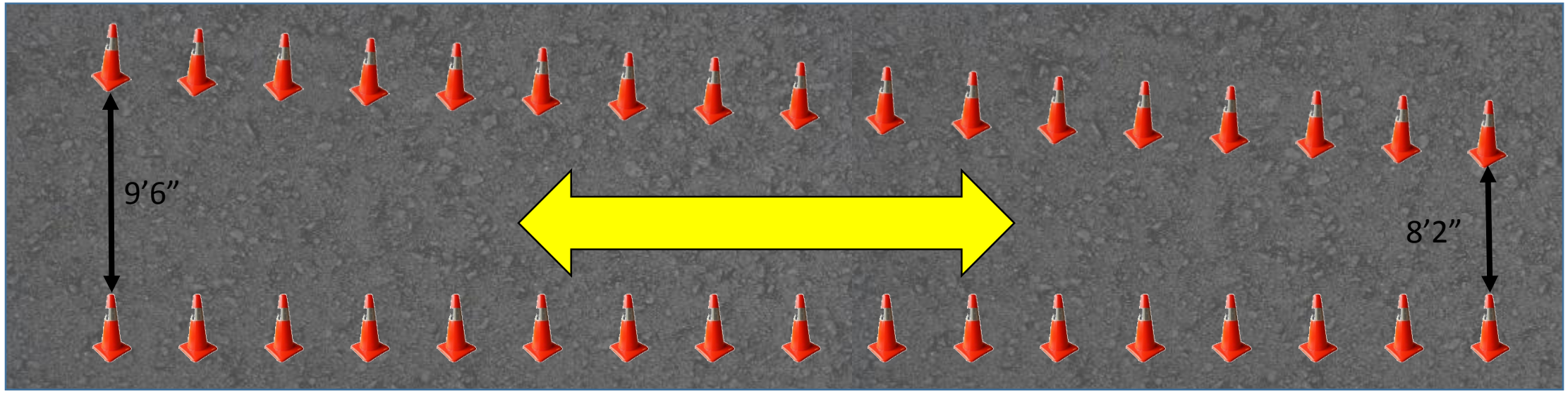
Where does this vehicle pivot?

How does a second axle change the pivot?

Practical Exercises
Diminishing clearance

Helps the student to:

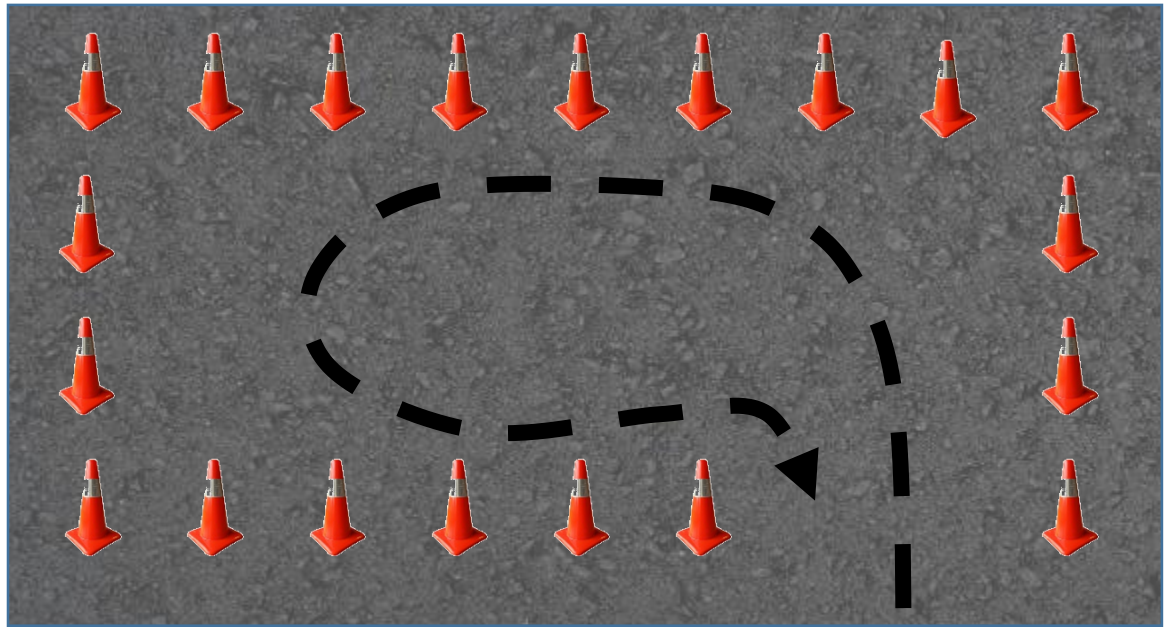
- Steer in a straight line while moving forward and backward
- Judge vehicle width as clearance changes



Practical Exercises
Confined Space Turnaround

Helps the student to:

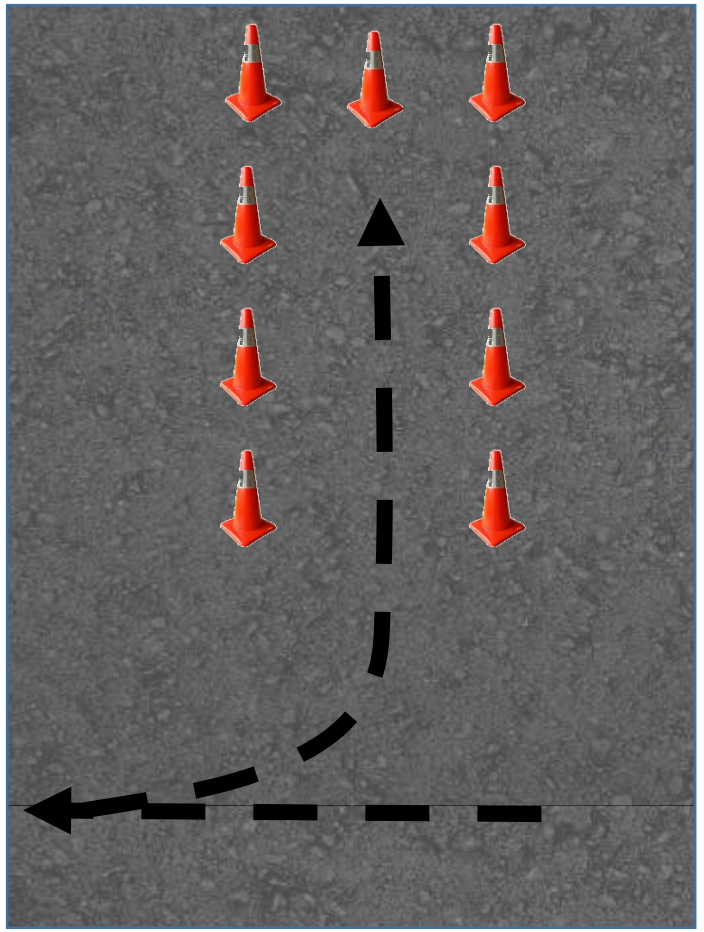
- Develop skills to turn around in narrow spaces
- Refine vehicle positioning to minimize backing



Practical Exercises
Alley Dock

Helps the student to:

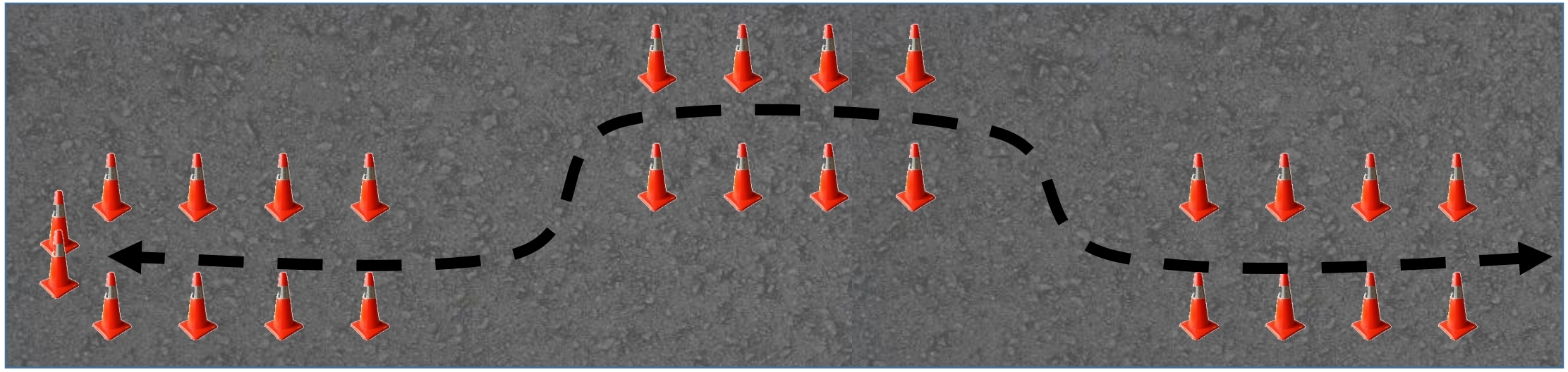
- Position for backing into a defined area or bay
- Improve depth perception and locate the apparatus tailboard
- Encourage use of both mirrors
- Develop backing in a straight line



Practical Exercises
Offset Alley

Helps students to:

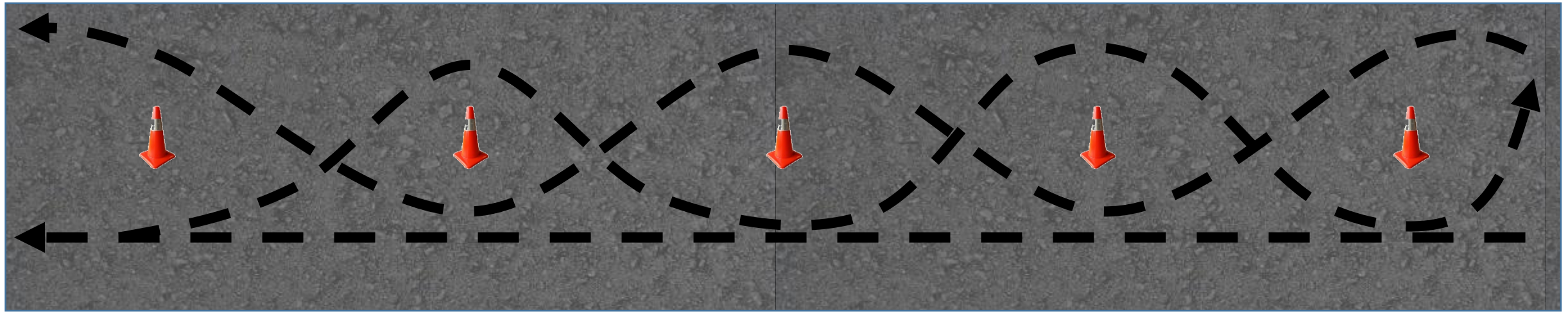
- Refine vehicle pivot points and develop precision positioning
- Learn vehicle dimensions
- Monitor multiple contact points on the vehicle at one time



Practical Exercises
Serpentine

Helps students to:

- Refine pivot points while in continuous motion
- Reduce over-steering
- Switch smoothly between mirrors



Practical Exercises
Public Roadway – Driving Behavior

- Students will be exposed to a variety of road types, times of day, and traffic conditions
- Students are evaluated on:
  - Pre-departure checks
  - Steering control
  - Smith System application
- Conducted during daylight and night
- Ties together the knowledge and skills reviewed in the course

SUMMARY

- Operating Class B apparatus is the gateway to the rest of your career
- This is not a “remember it for the test and then forget it” class
- Operating fire apparatus is one of the most dynamic tasks you will do
- The apparatus is a rolling billboard for the fire department – what message do you want to send?

For next class – you must bring a non-certified copy of your driving record.